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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re application of: RONALDSON et al.

Attorney Docket No.: UDL1P044C1

Application No.: 10/075,965

Examiner: UNKNOWN

Filed: February 13, 2002

Group: 3641

COPY OF PAPERS  
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Title: MONITORING A SAMPLE CONTAINING  
A NEUTRON SOURCE

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Commissioner for Patents, Washington, DC 20231 on April 18, 2002.

Signed: \_\_\_\_\_

Sandra Halliwell

**PRELIMINARY AMENDMENT A**

Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Please amend the above-identified patent application as follows:

**In the Abstract:**

Please add the following Abstract of the Disclosure. A clean copy of this Abstract is attached as an appendix hereto.

**--MONITORING A SAMPLE CONTAINING A NEUTRON SOURCE**

**ABSTRACT OF THE DISCLOSURE**

**A1** The invention considers the frequency distributions of singles, doubles and triple neutron emission events from a sample under assay. The count rates are equated to mathematical functions related to the spontaneous fission rate, self-induced fission rate, detection efficiency and  $\alpha, n$  rate with probability distribution assigned to each of those factors, the value of the product of all the probability distributions being increased to give an optimised solution and so provide a value of the spontaneous fission rate which is linked to the mass of the neutron source. The technique aims to provide increased accuracy and certainty compared with neutron coincidence counting based techniques.--